

Paediatrics

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Case history taking

- To be adapted, information from parents, try to discover what is really worrying the parent. If allergy; specific questions of pets, washing powder, soaps.
- Take prenatal history.
- Weaning history.
- DH; vaccinations (DPT,Hib at one month, repeated at 2 and 3rd month. MMR at one year, repeated before school.

- Immunological response poor before 6 months, but greatest danger pertussis, before 6 months. Passive immunity last for one year. To produce specific antibodies to individual infection need to be infected by each type of organism, and therefore small children tend to develop frequent infections.
- FH, SH.

Systemic enquiry

- Normal; babies bring up small amount of feed, stools vary, first few days, meconium which is black. If breast fed; bright yellow, loose, odourless stool, usually 3-4 times a day, often after every feed.
- Bottle fed; paler, firmer, more acid, smelly.
- Toddlers; 3-4 times a day, after meal, but varies, as long as consistency of stool, weight gain fine, no worries.
- Toddlers diarrhoea, in healthy children, frequent loose stools with undigested vegetable matter.

Examination of children.

- Children are not mini adult.
- Static weight is abnormal
- hepatomegaly of 1 finger is normal in childhood.
- Fontanelles posterior closes just after birth, anterior, persist until 18 months, depressed in dehydration, boggy in meningitis.
- Neckstiffness in older child with meningitis, not a feature in infants,
- babinsky reflex normal extensor up to 1 year of age.
- Periodic central abdominal pain in children is akin to migraine headaches in adults often a FH of migraines.

Herb availability in children.

- Slower gastric emptying, which delays absorption.
- Shorter transit time through intestines, so less likely to be absorbed.
- Reduced secretion of bile, and pancreatic excretions, esp. first few months.
- Greater % body water compared to body fat compared to adults; hydrophilic agents will be more dilute.

- Immature livers, decreased metabolism, so more susceptible to the toxic effects of e.g. pesticides, drugs, herbal preparations, nutrients.
- Underdeveloped gut flora; important when herbal constituents present as glycosides, and needing to be converted in the gut flora, by removing the sugar. Need to make sure got healthy gut flora.

- Element of uncertainty with children and absorption of medication.
- The reduced hepatic metabolism affect children in the first couple of years and has the most impact.
- Need to be cautious esp.. first two years of life.
- E.g. half life caffeine in adults 6 hours, in neonates 103 hours!

- Dosage based on age, weight, body surface area.
- Dilling's rule; $\text{age}/20$ (said to date from the 8th C)
- Young's rule (for children 2 and above); $\text{age}/\text{age}+12$ (for older child tends to underdose)
- for infants; Fried's rule; **age in month/150** (this is the best rule in infants till 24 months, especially if using tinctures since have very high degree of uncertainty, dose can be adjusted upwards, depending on response of patient).
- Gabius rule; one year= $1/12\text{th}$, 2 years= $1/8\text{th}$, 3 years= $1/6\text{th}$

- Augsberger's rule; **one and a half times the weight in kg plus 10** as the percentage of adult dose. (child 20 kg; $30+10=40\%$ of adult dose), this rule has been shown to be a good approximation to a body surface area curve in children, not to be used on infants, since will lead to overdosing.
- Salisbury rule; **weight in kg x 2 if the weight is less than 30kg. Weight plus 30 if the weight is greater than 30kg.**
So 20kg child, dose is 40%, but for 35 kg the dose is $35+30=65\%$.

- Infants reduced capacity to metabolise alcohol, which is usually developed by the age of 2 or 3. If follow the above guidelines, it is safe to give an ethanolic extract to children of any age.

- For flavouring can mix 15-20% of glycerites or syrups, or mix with honey, juice.
- Jelly mix; stronger than usual, 1-2 ml in each ice cube tray,
- powder or crushed tablets, mixed to the above.

glycerites

- Made from glycerol and water
- glycerol is a poor solvent for most phytochemicals
- less stable to tinctures
- comparison trial alcoholic vs non alcoholic preparation, the alcoholic greater efficacy
- dose of non-alcoholic needs to be adjusted to higher level to obtain same clinical effect.

Immunity

- Exposure; produces antibodies and memory cells.
- New-born; passive immunity via bloodstream prior to birth and breast feeding, immunity last till 6 months old.
- Antibiotics associated with increase allergies.

- Echinacea supports the non specific immune response, helps the body to be on guard, whenever an immune challenge, immune surveillance. Bacterial and viral infections.
- Andrographis; very bitter, enhance immune function, acute and chronic infections.
- Astragalus; immune enhancing, chronic infections
- Baptisia tinctorum; especially ENT, use low doses, works in synergy with Thuja occidentalis and Echinacea spp.

New-born

- If breast feeding , give medicine to mum.
- Absorption through skin, useful technique, eg tinctures or essential oils, herbal baths.
- Hand and foot baths; ancient tradition, hands and feet are sensitive areas, and full of nerve endings, constituents can pass easily through skin, need roughly 4 minutes each morning and evening.

- Compresses; flannel in hot or cold infusions or decoction, dilute tincture, or water with essential oil. Wring out and put on affected area, need to repeat several times to bring effect.
- Poultice; use herb itself, make into paste, put between two pieces of gauze, use light cotton bandage to bind the gauze poultice to affected part and keep warm with hot water bottle.

- Linament; rubbing oil or linament consisting of extracts of herbs in oil, or alcohol base, massage into area, usually contain stimulating essential oils or cayenne to increase local circulation and absorption.
- Powdered herbs on the umbilical cord, could mix it with honey, or add tinctures to honey, which is astringent and warming.
- Suppositories; add powdered herb to base of melted cocoa butter.
- Inhalations.

- Colic; check feeding technique, cows milk, or other dairy. Reacting to mums diet, common foods causing problems are Garlic, onions, spices, chocolate, coffee, legumes, beer, brassica's,
- after three, four days clear of food, should improve if that is the cause.

- Carminatives; *Chamomilla recutita*, *Foeniculum vulgare* (flatulent colic), *Cinnamomum zeyl.* (calming, antimicrobial, diarrhoea, wind), *Mentha pip.* (anti-spasmodic, anti-inflammatory), *Viburnum op.* (antispasmodic)
- Massage tummy; Chamomile oil, *Lavendula* oil diluted in olive oil, clockwise.

Sleep

- Bath; Lavender E.O., Anthemis nobilis floweres added to the bath, massage with the oils.
- pillow with hops and or lavender,change once a week.

- Calming herbs

- *Chamomilla recutita*; mild sedative. Used traditionally for convulsion, great for children, relaxes gut wall, slowing regulation peristaltic movements, carminative, reducing flatulen
- *Tilia europae*
- *Escholizia californica*
- *Passiflora inc.* [sedative esp. when nervousness, irritability and exhaustion],
- *Melissa officinalis*; calming, gentle
- *Avena sativa*; nervous system depleted

Toddler

- Importance of weaning, up to year the gut lining permeable, and relative easy for large molecules to cross this lining into blood stream. Leaky gut syndrome; Immune system may react potentiate allergic response, or sensitive. Organs relative immature. So not overload.
- Introduce foods at 6 months.
- Slippery elm.
- Careful with cows milk, wheat, citrus.

Allergy

- Eczema
- check foods
- Essential fatty acids; esp. omega 3.
- Urtica dioica, Viola tricolour, chamomile, Trifolium pratense, Galium aparine, Echinacea angustifolia, Glycyrrhiza glabra, Berberis aquifolium.
- Nervines, Adaptogens. Such as Withania somnifera.
- Externally; chickweed washes, baths, oats meal, or bran,

Asthma

- 75% will grow out of it by their teens, but it can return later in life, and is more likely if symptoms are moderate to severe.
- Inhaled steroids do not prevent the development of asthma.
- Find triggers
 - allergies dust, pollen, animal fur
 - infections cause irritation and inflammation, leading to bronchial constrictions.
 - Irritations smoke, chemicals, cold air, saw dust
 - emotional stress
 - FH
 - digestion; low HCL , leaky gut syndrome, digestive flora, other digestive enzymes.
 - toxin overload additives, colouring, pesticides.

- Herbs; Glycyrrhiza glab., Inula hel., Echinacea ang., Verbascum thaps., Chamomile rec., Thymus vulg., Ginkgo bil. need to take the latter 6-8 weeks to note the effect.
- Diet; Vit. A, E, C, selenium, zinc. Essential fatty acids, magnesium.
- milk, chocolate, wheat, citrus, tomatoes, colouring and additives, tartrazine, some vitamins and drugs, contain sulphur dioxide, also found in salad dressing, potato products, white four, margarine.

Acute illness

- Most self limiting.
- Uncomfortable, and vulnerable.
- Reduce symptoms
- assist immune system,
- assist convalescence, full recovery.

Fever

- Kills bacteria , viruses.increases white blood cells numbers and activity, and migration.
- Very young; lowered convulsion threshold, but only occur rarely. Febrile convulsion is a general seizure, in response to fever, in a neurologically normal child, less than 5 minutes duration, only once in 24 hrs, between 3 months and 5 years. FH, rapidity in rise of T more significant than the max temp. and tend to occur early in illness, the first rise in T, usually viral/ rarely long-lasting problems, reoccurrence rare after 6 months.
- Refer if child listless, neck and head pain and or with stiffness

- Bacopa and Scutellaria lat. to be used in convulsion.
- Fever; Vit. C, zinc, Echinacea
- diaphoretics in warm tea; Achillea, Tilia europae, Sambucus nigra, mentha pip, zingiber. Eupatorium perf., bathing in tepid tea bath with Melissa.
- Cf if child delirious, flat, fever with stiff neck, and persistent headache, twitches, roll eyes, loses consciousness.

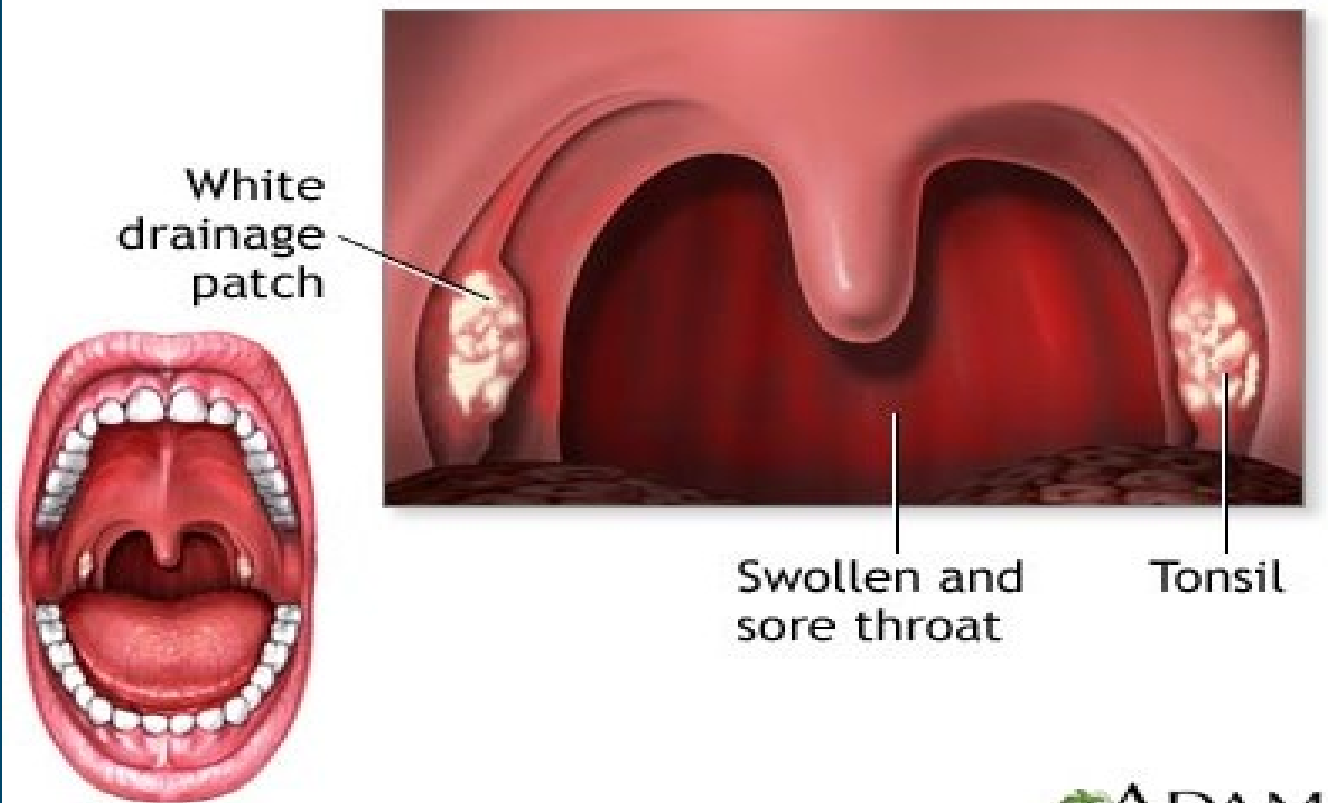
- Children recent AB, twice as likely to harbour antibiotic resistant bacteria.
- Tonsillitis; common 2-8 yr. olds. Low incidence of streptococcus throat. Related to rheumatic fever, this reason to give AB
- WHO guidelines; recommend waiting time for 4 days, followed by swap if throat infection persist, enough time if strep A present, rheumatic fever takes 2 weeks, and glomerulonephritis takes 3 weeks to develop.

Scarlet fever



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Strep throat is the most common bacterial cause of sore throat. Because strep throat can occasionally lead to rheumatic fever, antibiotics are given. Strep throat often includes a fever (greater than 101 degrees Fahrenheit), white draining patches on the throat, and swollen or tender lymph glands in the neck. Children may have headache and stomach pain.



- Fluids, honey lemon.
- Chamomile.
- Steam with eucalyptus,
- Echinacea, Calendula officinalis, althea, thymus, salvia, Hydrastis,

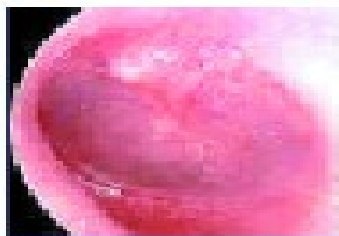
Otitis media

- Food intolerance
- immune support
- warm oil mullein, Hypericum, garlic,
- sit upright, hot water bottle to ear,
- frequent Echinacea, Sambucus nigra, Hydrastic canadensis. Solidago, uphrasia.

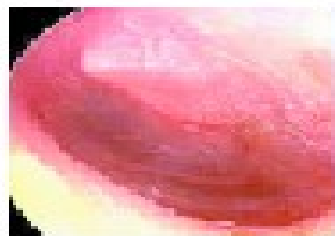
Otoscopy findings



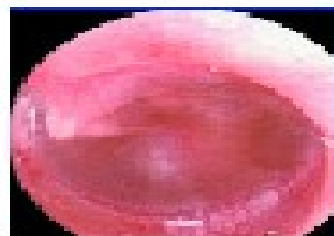
0: Normal or effusion without erythema



1: Erythema only, no effusion



2: Erythema, air/fluid level, clear fluid



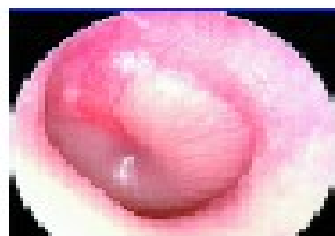
3: Erythema, complete effusion, no opacification



4: Erythema, opacification with air-fluid level or air bubble(s), no bulging



5: Erythema, complete effusion, opacification and no bulging



6: Erythema, bulging rounded doughnut appearance of the tympanic membrane



7: Erythema, bulging, complete effusion and opacification with bulla formation

Colds.

- Echinacea, glycyrrhiza.
- Lymphatic; Calendula off., Phytolacca, Galium aperiens.
- thyme and propolis.
- frozen teas.
- glycerine.

Coughs

- Althea, glycyrrhiza, foeniculum, Marrubium, inula,

tonics

- Bitter tonic such as Chamomilla rec.
- Withania somn., esp if anaemic and under weight.
- Cinnamomum zeyl., cardamom, Foeniculum vulg., Angelica archangelica, Mentha pip., Zingiber off.
- Supplement, eg kindervital

Stomach problems

- Look at cause;
 - chronic, recurrent diarrhoea; e.g. food intolerances. Eliminate the cause and use slippery elm which you could mix with honey.
 - Emotional causes, leading to colic; Chamomile, Foeniculum, Viburnum opulus, Tilia europae, Melissa off.
 - food poisoning; Echinacea spp., Chamomilla rec., apple juice, Mentha pip. And zingiber off. for nausea.

Gastroenteritis

- Bacterial, viral, parasitic
- retrovirus most common, incubation 24-72hours
- dehydration, esp babies, watch out.
- Keep breast feeding frequently.
- Chamomilla rec, Agrimony eup., Althea rad., Echinaceae.
- Temporarily lactose intolerance.

Probiotics

- Probiotics presence of bifido bacteria, related to breast fed babies.
- Produce substances antibacterial, such as lactic acid, acidolin, acidophilin, lactobacillin, bulgarican. (Acidophilin, and bulgarican inhibiting effect on certain pathogens).
- Mimimise proliferation of many enteropathogens by competing for the same receptor sites in the intestinal mucosa, and interact directly with the pathogen, it reduces ability to adhere to mucosa.
- Increases phagocytic activity of white blood cells in the blood.

Urinary tract infections

- Tends to be bacterial in children. E.coli the most common. Increased risk for recurrent infection and renal parenchymal damage, and renal impairment.
- Child might not have any symptoms or signs.
- Echinacea, Buchu, Arctostaphylus uva ursi, Zea mays, equisetum arv. (restorative to the bladder, improving connective tissue tone, and resistance).
- Gut flora.

Childhood infectious diseases

- Ease symptoms,
- encourage healing, immune system.
- fully recovery, preventing chronic problems
- measles; echinacea, Hypericum perf., Galium aparine, Calendula off. Diaphoretics,
- Externally chamomile, stellaria
- conjunctivitis, use euphrasia off., Chamomile,
- Calming; Chamomilla rec., Tilia eur.,
- prevention chronicity; Withania somn., Echinacea, Glycyrrhiza glab.

German Measles (Rubella)



Measles (rubeola)



- German measles;
 - Echinacea, calendula off., Achillea mill., Lavendula off., Eupatorium perf., Mentha pip.
- Chicken pox;
 - reduce itching; hamamelis, Commiphora molmol, Hydrastis can, Melissa officinalis, Glycyrrhiza glabra, Hypericum perf.
- Mumps
 - echinace, lymphatics, plus poke root, hypericum perf. , mentha pip
 - poultice on neck with poke root, verbascum thaps., cabbage, carrot poultic.

Chickenpox



Mumps



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